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Programs

This is an exploratory effort to determine factors available at the time of application for admission, which will better identify who among marginal applicants are most likely to succeed in college. Some 19 marginal applicants to Hope College were studied in terms of admissions data, their performance in the specially designed summer trial program, and their experience and performance during their total first year of college. The results of the study indicate that the usual academic predictors of college success (high-school grades, Scholastic Aptitude Test scores, rank in graduating class) are of no use at all in predicting the first year, cumulative grade point average of these marginal entrants. However, these predictors are useful in predicting how the students will perform in the Summer Trial Program. In turn, the grade earned in the summer program is highly predictive of the total cumulative grade point average at the end of the freshmen year. The special program designed for the summer and the follow-up of the trial students during their first year appeared successful both in terms of the low attrition rate among the participants and in terms of personal growth and development of the individuals involved. (Author)



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FINAL REPORT

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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# IDENTIFYING THE POTENTIALLY SUCCESSFUL AMONG MARGINAL COLLEGE ENTRANTS

Leslie R. Beach

Hope College

Holland, Michigan

August 1968

The research reported herein was performed pursuant to a contract with the Office of Elucation, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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INTRODUCTORY SECTION

#### Summary

The question of who should go to college is one that continues to plague higher education theorists and admissions officers across our country. There can be no question but that many applicants are being admitted who do not belong in college as witnessed by the high attrition rates. It is equally certain that there are those who should be in college but are denied admission for one or a combination of varied reasons.

The present investigation is an attempt to better identify those among marginal college applicants to a liberal arts college who should be permitted to enter college despite unfavorable prediction based on the usual admissions criteria. A second objective of the study is to develop and evaluate a program designed to help those who are admitted with their adjustment to college during their first year.

A select group of marginal applicants to Hope College for the fall semester, 1967, were invited to attend a special Summer Trial Program prior to the fall semester, with the understanding that successful completion of the Trial Program would gain them admission to the College. Twenty students responded favorably and were enrolled in the special summer program. Nineteen of these successfully completed the program and were admitted in the fall. Special testing, special aids in learning and study skills, and special counsel and guidance were provided the participants in the summer and throughout the school year.

Following the summer and school year of college work an analysis and evaluation of the program was made in an effort to determine which variables accessible at the time of admissions would have given the best prediction of academic success in the first full year of college. Multiple correlations, t ratios and regression equations were computed and developed in making this assessment.

The most outstanding findings of the study were the following:
(1) the usual intellective predictors of college success were useless in predicting who among these marginal entrants would be most or least successful academically; (2) these intellective factors were useful, however, in predicting who would do well in the Summer Trial Program; (3) in turn, the grades earned in the Summer Trial Program were highly predictive of those most successful by the end of the full year in college; (4) some of the non-intellective factors evaluated from standard admissions material proved helpful in making predictions—but often in an unexpected direction.

More study is needed and is continuing at Hope College. The Summer Trail Program is being continued due to the fine records

of some of the participants and due to this study's discovery of unusual patterns of qualifications predicting the academic future of marginal entrants far more accurately than the qualifications or factors ordinarily employed.

More careful study of the role of non-intellective factors is needed and further investigation as to why the usual predictors are not effective for marginal students, may prove enlightening.

#### Introduction

Colleges and universities across the country, and especially admissions people, are becoming less and less satisfied with past academic performance and aptitude test scores as the sole criteria for admission to college programs. While these criteria do seem to remain the best single predictors of success in college, there seems to be increasing discomfort over the fact that some very important persons may get by-passed and refused admission to college on these criteria. Moreover, such individuals might not only be able to complete college but could, in some cases, contribute even more to society as college educated persons than some of those who are automatically admitted but do not have "other desirable traits and characteristics." Of course the real problem for selection and admission people in American higher education comes in identifying and defining this area of "other desirable traits and characteristics." However, the fact remains that colleges and universities in general, and liberal arts colleges in particular, are still looking for some additional criteria that will help them avoid the mistake of overlooking the person who really should be given the opportunity for the college experience but cannot even gain admission. It is realized more than ever before that the successful adult person is not necessarily the person who has high academic ability and skills only.

Efforts are being made continually to identify those factors in the personality and character of the individual or in his home background or past conditioning which will enable him to succeed in college despite the unfavorable prediction provided by his intellective performances of the past. And, it might be added, various personality tests may not be the only approach to identifying such characteristics; teachers, counselors, or principals who have observed the individuals over a period of time may be able to make valid judgments on some of these characteristics. Until we succeed in identifying such factors and admit at least limited numbers of college applicants who possess them, we are not admitting to our society that number of college educated persons. At the same time, we are admitting to college people who do not graduate even though they do possess the academic qualifications.

While the numbers of these potential college graduates now being overlooked may not be great, the proportions of this problem actually are major for those who are being overlooked and for our nation which is in dire need of <u>all</u> those who desire to become and can become college graduates.

Numerous studies have been conducted in an effort to find better ways of predicting college success and to assess the effects of special programs. Of those studies assessing the role of intellective factors in prediction, the following are typical.

Richards, Holland and Lutz (1967) found the most consistently high predictors of student accomplishment in college to be accomplishment in high school grades and/or some combination of high school grades and college aptitude scores. Nichols (1966) places high school rank and aptitude test scores among the top three best predictors of college grades, although some non-intellective variables were also studied and found helpful in prediction. Among National Merit finalists, Holland and Nichols (1964) found that records of past achievement and a specially constructed measure of potential achievement were the best predictors of academic and extracurricular achievement in college. Multiple correlations with intellective variables (batteries of tests) yielded the best prediction of overall grade point average in Lavin's review of research (1965); yet the best single predictor was high school academic record. And in his review of research, Travers (1949) points out that, in general, high school grades are the best predictor and subject-matter tests the second-best predictor of college grades. From these studies and numerous others it is clear that intellective factors such as high school academic performance, college aptitude test scores and subject-matter test scores represent the best predictors of success for college students generally.

When we turn to the study of non-intellective factors as predictive of college success, the studies are few and far between. Lavin (1965) points out, when personality variables are studied the findings are incomplete and equivocal. Furthermore, the studies tend to treat the student as if he were operating in a "social vacuum," not taking into account the role of other dynamic variables at work. However, Nichols (1966) does report that non-intellective factors such as personality, attitude, interest and behavior variables were found in his work to rank second among the best predictors of college grades, coming in second to high school performance but ahead of aptitude test scores.

Travers (1949), too, reported findings that showed the value of combining some non-intellective factors with intellective factors to increase the multiple correlation obtained between predictors and earned college grades. He concludes that insufficient emphasis is

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placed on non-intellective variables and excessive emphasis is being placed on standard measures of scholastic aptitude. While Travers' article was written nearly twenty years ago, the picture seems to remain much the same today. More realization of the importance of non-intellective factors may be present but not a great deal more is being done in an effort to find what they are and just how they fit into the prediction of college performance.

One other study in which combinations of intellective and nonintellective factors proved worthwhile was that of Holland and Nichols
(1964) in which they found that their specially constructed measure
of potential achievement (including interests, goals, self-conceptions),
combined with past achievement gave predictions superior to other
variables and equal in efficiency to the best multiple regression
equations. Thus, it is evident that non-intellective factors still
need further study but have already shown some value, especially
when used in combination with intellective predictors.

What has been the success of special programs in preparing students for college and in predicting college success?

Special advising was found by Hendrix (1965) to be of value. Those with low predicted grade averages, when given special advising during the freshman year, showed significantly higher achievement than a comparable group advised by regular faculty advisers. Again, in the light of the findings of the present investigation the form taken by the special advising seems parallel. These students were specially advised in considering reduced loads and special study skills courses; they were encouraged to visit the administrators; an encouraging and friendly attitude was maintained throughout; precollege orientation and other assistance was made available. The results of the present study also make it appear that there is something very helpful to the marginal college student in the special attention and personalized treatment received when there is special advising.

Summer programs of various types are offered in many colleges and universities, yet the results of these programs seldom find their way into the literature. What has been reported has not been too encouraging. Scott, Wilcox and Fisher (1966), for example, examined those who had entered college in the summer as compared with those entering in the fall. Over the first two quarters their comparisons yielded no significant differences. There was no particular benefit from entering in the summer. However, there is no indication that much in the way of special attention or remedial work was given these students. Hills, Gladney and Klock (1967) hold that although summer trial programs are widely used, they are better escape valves than rescue devices. They comment that, "Few students who are admitted to college on a trial basis will graduate four years later, but those

who try and fail seem much more willing to recognize their limitations." (p. 646) The present investigation has produced results that cause the author to agree with the last part of this statement but not the first part! In the pilot trial program conducted at Hope College and the Summer Trial Program studied in this project, the attrition rate has proven to be very close to the rate shown among students regularly admitted. While the trial students do not excel in their work, except for a few who have done very well, they do make it through a year or two years or all four years of college in about the same proportions as regularly admitted students.

This special type of summer program has been conducted at Hope College informally for several years. During the summer of 1965 the College conducted a pilot program that was better organized and had an appointed director to plan and coordinate the total program. This pilot program was considered successful and all the participants were admitted for the fall semester. After three years of college approximately sixty per cent of the students from the program are still enrolled and carrying acceptable grade point averages; a few of them have become quite outstanding leaders on the campus and in student affairs. The pilot program also gave some valuable leads for the better identification and selection of participants for such a trial program and ways in which the program, with appropriate followup, might best insure participants' success in college. The present study pursues these leads from the past, more systematically gathers and analyzes data on the marginal students, follows them through a specially designed Summer Trial Program (1967) and their first year of college, and evaluates some special efforts to provide the kind of program and guidance best suited to their special needs. It should be pointed out that this is not a study of underachievers, since some of these applicants will actually be marginal in basic ability. Others will be academically handicapped because of late maturing, "uneven development" of intellectual abilities, weak and/or "ghettotype" high school background, special extenuating circumstances in their lives or families, and other unique conditions.

#### Methods

In order to best understand the methods used in this project and the analyses performed on the data gathered, a rather extensive description of the specially designed summer program is necessary.

#### The 1967 Summer Trial Program

<u>Purpose</u> and <u>objectives</u>. The overall purpose of the 1967 Summer Trial Program was to provide opportunity for the select group of participants to assess their readiness for the total college experiece.

This can be spelled out best in the following expressed aims of the Program:

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It provides the trial student with an opportunity to "try himself" on full-fledged, typical college course work.

It provides the participant with some special aids for developing certain knowledge and skills essential to academic success in college (improvement in reading, writing, study skills).

It provides personal assistance in developing the appropriate attitudes and habits for achieving success and satisfaction in college (individual conferences, resident adviser contacts).

It makes it possible for each participant to come to a better understanding and a realistic appraisal of his own potentialities.

The philosophy of the Director of the Summer Program, and thus the prevailing philosophy of the Program itself, was communicated to the participants as follows. College life does require ability, skills, motivation and maturity. We have to be realistic about this: the people in this type of program have already been judged to be lacking in these qualities to the extent required for success at Hope College. This is nothing to be ashamed of because the standards of Hope College are relatively high and its reputation somewhat outstanding. However, everyone connected with the directing and instructing and advising in the Summer Trial Program is devoting his life to work with students and has as his goal, above all else, giving to his students everything he can give to help the student help himself. The College and the instructors in the Program are really on the side of the student and are there to do everything possible to help the participants succeed and be admitted to Hope College in the fall. The course work is standard college work. None of the work taken is watered down in any fashion; the grading and the requirements are as rigorous as they are in the regular college courses during the school The participants in the Program have been selected because there is reason to believe they can succeed in the Summer Trial Program and even in the regular college program given sufficient motivation, basic skills and the proper attitude toward college. Opportunity is provided during the Trial Program to develop all of these requirements for college success. The rest is totally up to the participant.

Design of a program to meet the objectives. The summer program was designed to serve the objectives listed above. The participants enrolled in a single course (psychology) for 5 semester hours of credit. The teaching of the course was shared by three instructors (Dr. Beach, Dr. Barlow and Miss Susan VanOuwerkerk) and opportunity was provided for various kinds of college learning experiences in this course, such as classroom lectures, discussion periods, group work, lab demonstrations and experiments, extensive reading in an academic discipline, outside library assignments, written assignments, quizzes, tests and comprehensive examinations.

Since reading habits and skills have been a perpetual problem of trial students, a full course with the Reading Center was planned and conducted. Coordinated with the reading improvement classes was instruction in the basic skills of writing a good sentence and a good paragraph. This instruction was planned for the first part of the 6-week period so that the greatest possible benefit might be derived during the summer and so that improved reading and writing skills could be practiced during the remainder of the summer session. In addition to these sessions involving the whole group, voluntary sessions were planned in which individuals or groups of individuals could obtain further guidance and helps with their reading and writing problems. Also made available to all participants was an AUTOTUTOR teaching machine and programed films (35 mm. reels) providing self-instruction on any aspect of writing which a participant needed to pursue further on his own time.

Getting at the development of habits and attitudes which prepare one mentally and emotionally for college is a difficult matter. Discussion periods with advanced students assisting in the Program were scheduled for the participants: From past experience it was felt that the Program objective would be better served by student-led discussion of these matters than by faculty-led discussions.

Housing of the Program participants was handled by having those needing campus housing live in the dorm with regular summer session students. One of the student assistants in the Program, was appointed resident adviser in the dorm and worked closely with the Director in supervising and assessing the Trial Program students.

Staff for the 1967 program. Grant funds permitted better staffing than the College had been able to provide in the pilot program earlier. However, because of the results of this study the College is investing more in an expanded staff for future Trial Programs. All instruction in the Program was provided by the College since the participants paid tuition.

The author served as Director of the program and had the final responsibility for all phases of it. He supervised the Assistant Director and other instructors and assistants involved. He also supervised the research done during the summer and the school year, as the students were followed through the first year of their college work and as the statistical analysis of all the gathered data was conducted.

Susan VanOuwerkerk served as Assistant Director in the Program. She assumed a major responsibility in supervising instruction and discussion in the psychology course, conducted some statistical and other research work, and assisted the Director with numerous details of administration of the Program.

Two student assistants were employed in the Program throughout the summer. Dennis Wilcox, a psychology major graduate, assistend in class discussion periods, in holding individual conferences with participants, in statistical work related to the research aspect of the project, and in overall planning of the academic, social and recreational parts of the summer program. Peter Smith, a psychology major entering his senior year, served not only as resident advisor but also served as discussion leader in the course, held discussions on college life and college issues, conducted individual conferences with participants, and provided general supportive help to individuals in the Program.

The instructors in the Program were the author, who delivered lectures and led discussions in the psychology course; Dr. Barlow, who delivered a few lectures and conducted the laboratory part of the psychology course; Miss VanOuwerkerk; who also lectured and assisted in the informal discussions held as an adjunct to the course; and Mrs. Helen Schoon, who provided the instruction in the reading-writing improvement classes.

Selection of Participants. The participants in the 1967 Trial Program were selected by the regular College Admissions Committee from among those who applied for admission to the College but fell short of the regular admissions requirements. When the commonly used requirements on high school performance and class standing, on CEEB exam scores, and on other "academic" criteria, were not sufficiently met, special attention was given to family background, evidences of motivation for going to college and coming to Hope, written recommendations and other indications that the applicant either would be a reasonable risk or should be "given a chance" at college work.

Actual schedule and procedure of the program. The scheduling of the summer's program was such that the reading-writing classes were held during the first period in the morning each day (8-9:30 a.m.), during the first four weeks of the 6-week session. (During the last two weeks, extra psychology classes occupied this period.) During these first four weeks the total group was divided in half and one half attended the reading-writing instruction first while the other half participated in informal discussion related to the psychology course. During the second half of the period the groups switched activities and places. In the second period of each day (10-11:30 a.m.) the regular psychology class was held. Two afternoons a week an afternoon period (1-2:30 p.m.) was included. During this time the psychology lab session was conducted. In addition to these scheduled meetings, other individual and group sessions took place from time to time for additional discussions on preparation for and adjustment to college life, special assistance with reading and writing problems, scheduled individual conferences (three conferences with each participant), outside work on the teaching machine, and any other special need that arose.

Despite the rather heavy summer schedule, the participants did not feel unusually overloaded and worked very hard, cooperating well with the staff, with only few exceptions. Informal recreational activities and some planned social events were scheduled by the Trial Program staff.

Periodic individual conferences were held with the participants to determine their general progress, to explore their reasons and purposes in coming to Hope, and to show a definite interest in how their own efforts and self-assessment were progressing. In addition to the scheduled conferences with the student assistants, some conferences were also conducted by the Director with certain students who may have been having special difficulties or required additional counsel or guidance.

The plan of having a resident adviser living with the students and working closely with the Director was an ideal arrangement. He did an outstanding job as resident adviser--working hard and many long hours (often far, far into the night) helping the trial students grasp the psychology course concepts, and appreciate the significance of their present experience, their future college work and the image, regulations and program of Hope.

Summer Trial Program was a success. The attitude and morale of the students (with only one or two exceptions) was high and positive throughout the summer weeks. Motivation remained high throughout in the psychology course as reflected in the distribution of final grades in the course:

A-	3	C+	6	D+	0
B+	2	C	3	D	0
В	0	<b>C-</b>	2	D-	1
B-	4			F	0

The course was of equal difficulty to any regularly offered introductory psychology course and the usual grading standards were employed.

While there were some serious doubts in the minds of the instructors regarding the readiness of certain participants for a stiff college program, they did recommend to the Admissions Committee that all but one of the participants be permitted to enroll in the Fall--provided several took reduced loads and that certain ones receive special advising and/or counseling. These recommendations were followed by the Admissions Committee and the Recommendation was made, further, that Drs. Beach and Barlow be assigned as faculty advisers for these students, if possible. With the assistance of the summer resident adviser as continuing assistant on the total Project during the school year, it was possible to follow these students carefully through their first year and to provide additional assistance where it proved helpful.

Evaluation of the 1967 program by participants and staff. It is a difficult task to evaluate the success or the benefits of an overall program such as the Summer Trial Program-especially immediately upon its completion. However, an effort was made to do this from the viewpoints of the participants in the program and of the staff.

As has been mentioned, the attitude of the trial students was very positive and they seemed to feel a deep gratitude for "all that everyone is doing" to give them this opportunity to prove themselves and have a "second chance" to get into college-particularly into Hope. To get as objective a view as possible of their feelings and reactions, two members of the summer school administration, not directly related to the Trial Program, Dr. Henry tenHoor, Director of the Summer Session and Mr. Bob DeYoung, Dean of Men, were asked to interview the participants at the close of the summer program. Open-end questions were used to get the respondents to speak in their own words about the summer experience. They were asked their general reactions to the Program, what they felt benefited them most, what benefited them least, what they liked most, what they liked least, how demanding they felt the Program had been, and what, if anything, they'd like to see changed for future Trial Programs.

In general, the reactions to the Program and summer experience were very positive. The students felt that their time had been profitably spent, that the work had been demanding-but not too much so, that they had been given a good preparation for and a taste of real college work and that they felt ready for college. Some specifically expressed gratitude for the opportunities given them through the Trial Program and others made special mention of the benefit. received from having an upper-class student serving as a concerned and interested resident adviser. They felt that the psychology course was very appropriate material for them to study as it related to their present situation but a few felt it might be combined with other courses. Some felt that the lab part of the course was of less relative value compared to the other material covered. Some made reference to the lack of social activities.

What may be a truly significant outcome of the Trial Program was that many indicated they had gained considerably more confidence in themselves from the summer experience—and they had not at that time received their final grades or learned of action on their admission application. In summary, they seemed to emerge from the summer experience with gratitude, eager anticipation and confidence.

Responses from the individual conferences held by the student assistants on the staff followed much the same pattern. Here, too, the students were extremely positive in their reactions to the program and expressed enthusiasm and appreciation for the approach and the "second chance" being given. A major goal of the conferences held

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during the summer program was getting the individual to perform an honest self-appraisal in terms of his total readiness for college. The first conference dealt with questions related to reasons for wanting to go to college, what would be done with the college education, how the summer work might be serving those goals, what was being accomplished in developing an effective pattern for study and learning, and how readiness for college was developing for the individual. The second conference dealt primarily with actual progress in the course and in study habits and attitudes. General attitudes toward college, extracurricular activities, social life and varied aspects of campus life were explored and the participant was urged to consider all these matters particularly in the remaining weeks of the summer to find the balance and perspective which he felt was appropriate for him should he begin college in the fall. final conference dealt mostly with the individual's assessment of his own readiness for college. Surprising insights and responsible thinking had emerged in the minds of many of the participants and they seemed to have done quite a searching and honest job of self-evaluation. Several were very frank and forceful in stating that they certainly were not ready for college when they came but now they felt they were ready. In their assessment of the course with the staff assistants special favorable mention was made of the employment of discussion in the psychology course. The students felt that this was especially good for freshmen and was something that should be incorporated as much as possible in all courses for freshmen. This gets them into the habit of being active in the learning process rather than slipping into the passive learner role.

The entire staff was enthusiastic in evaluating the Program. As the summer program drew to a close, the staff met to make an overall evaluation in the light of the objectives set out at the beginning. It was the consensus of the group that the aims had been well served and the objectives had been adequately achieved.

Considerable discussion was devoted to the possibility of having two courses for the trial students rather than the one 5-hour psychology course. This seemed a distinct possibility but the staff felt there would need to be a strong argument for changing anything very drastically from the pattern followed this summer. The trial students did not feel "out" with the other summer school students; the one major course gave them a real sense of unity and esprit-de-corps; they did feel that the course was pertinent and helpful to them personally as well as being good college work.

The question of putting trial students in classes with other summer school students was also discussed by the staff. As mentioned above, the trial students felt they were an integral part of the summer school program and the staff seemed to feel that something would be lost if these students were put in with other summer school classes. The student assistants felt, on the basis of their re-

conversations with participants, that a regular summer school professor teaching a regular summer school course could not possibly bring about in these students the sense of accomplishment, the easing of anxieties and the feeling of "someone really concerned and caring about their progress" which they seemed to get from being together in their course and apart from other summer students. A particularly strong feeling expressed by the members of the staff was that the Trial Program students should be by themselves in at least one course taught by someone identified with the Summer Trial Program and its philosophy and objectives. It was also pointed out that it would not be entirely fair if upper classmen were in the same freshman course with these marginal students just out of high school. Such a situation does sometimes occur in freshman summer school courses.

Follow-up during the school year. The Director of the summer program and one of the student assistants conducted the follow-up of the 1967 participants during the entire 1967-68 school year. Data collected on the students during the summer were analyzed further, as were additional data as they became available from the students' performance and activities during the regular terms. Contacts were made with instructors and resident advisers to insure the attention and opportunities usually given any student likely to feel some need for assistance and/or guidance. Periodic conferences with the students were conducted to keep abreast of their interests, activities, academic performance, general college adjustment and any other pertinent developments. Encouragement was given to seek immediate counseling, advising or guidance when problems arose. As grades became available some statistical analyses were carried out to further the aims of the research project.

The final assessment of the project's work and the final data processing and reporting were conducted at the end of the school year, when these students had completed their first year.

#### Data Collected

It was realized from the start of this project that, in the final analysis, there would have to be some form of quantifiable data to enable meaningful interpretation of the results of the study and to permit its replication in any parallel form. The decision was made to concentrate primarily on the type of data available on the college applicant at the time of application for admission.

Admissions data. To make admissions data and miscellaneous information manageable, a system for rating such material was experimented with in the pilot study of 1965 and, with some minor modifications, was employed in the present study. Details on the manner in which these ratings were made appears in Appendix A of this report. The variables studied were the following.

SAT-V -- Simply a straight rating on the raw score SAT-M -- Rating on raw score

IQ and other tests -- An average of ratings on IQ's and on other tests (general achievement, educational development tests, etc.) in terms of percentile rank

H.S. Average and Rank -- Average of rating on H.S. grade average and on rank in graduating class

Family Background -- Average of ratings on parents' education and on father's occupation

Attitude and Motivation -- Average of ratings on "irregular record" (showing work when motivated) and on evidences of positive attitude and motivation

Leadership and Recommendations -- Average of ratings on "significant leadership" in high school and on recommendations by capable persons (teachers, counselors, principals, etc.)

As is readily evident, some of these are intellective factors and some are non-intellective factors which may play a role in a student's success in college. An unfortunate move made in this study was to combine (in the interest of cutting the total number of variables) the final two items. The section of this report on findings and analysis will show that very unusual correlations appeared between these ratings and the cumulative grade point average of the Summer Trial Students over the summer and first year of college. Having started with a combined rating, it is impossible to tell for sure which of the two rating or their combination is really responsible for the correlation being what it is, but from inspection of the data it appears that those earning low grade point averages rated high on recommendations. In any similar study in the future these two factors should be separated for analysis.

Data Other Than Admissions Data. A number of psychological tests had been used in the pilot study and some of these were discarded for the present study because they proved of no significant value. For example a measure of academic motivation was used before but proved totally inadequate in predicting the success of marginal students because it predicted nearly all of them failing which is obviously an invalid prediction since approximately sixty per cent of the students on whom it was used are still successfully pursuing their college career at the end of their junior year. Also, measures of self concept and opinions and attitudes had proven of no particular value in the pilot study so they were not employed in the present study. Apparently what was found in this study was beginning to show in the pilot study, viz., what may be helpful in predicting performance in regular college students cannot be depended upon to predict on marginal

Findings and Analysis

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students. Two additional tests were used, however: the Brown-Holtzman Survey of Study Habits and Attitudes and the Watson-Glaser Critical Thinking Appraisal, since they had shown some interesting results earlier. However, as the later section of this report will reveal, these, too, proved of little or no value in revealing any significant predictions or changes in the students during the summer and first year of college.

### Methods of Analysis

The primary method of analysis used on the data is correlation technique. In an attempt to find what factors predict performance or success in college, correlation coefficients (Pearson product moment) are computed (1) between the ratings on the various admissions variables and the participants' grade earned in the Summer Trial Program and (2) between admissions variables and cumulative grade point average from the summer and the first full year of college. Since the ratings used may be considered as points along a continuous rating scale, correlation technique is appropriate and it is, of course, the prime method for establishing the validity of predictors; of performance. In addition to the correlations between individual variables in the study (a correlation matrix of significant variables appears in Appendix B of this report), multiple correlations were computed to determine the combinations of variables which would provide the best possible predictions for college grades. From these multiple correlations regression equations may be developed indicating the ways in which each factor contributes to the overall prediction. (See Appendix C.)

Where appropriate on some pre and post measures and follow-up measures a correlated Fisher's t ratio has been computed to determine the significance of any mean differences found.

#### Findings and Analysis

The most significant findings of the present investigation are the statistical findings but some attention will also be given to some of the more subjective and impressionistic results of the periodic conferences with the Program participants through the Summer Trial Program and throughout their first year in college.

#### Statistical Findings

Brief mention should be made of the findings from the psychological tests employed. The Brown-Holtzman Survey of Study Habits and Attitudes administered at the beginning and at the close of the Summer Trial Program and again at the end of the school year yielded no significant

results, either in terms of assessing any change taking place or in terms of possessing any predictive power regarding future performance. The same was true of the Watson-Glaser Critical Thinking Appraisal. While there was some increase in scores on this latter test, they did not approach any significant level of confidence.

The most pertinent findings are those correlations showing the relationship of the various potentially predictive factors to performance in the Summer Trial Program and to performance in the first year of college work. Table 1 below summarizes these correlations.

Table 1

Correlations between Predictive Factors and College Performance

Corre1	ations with	Correlations with			
Summer Tr	ial Program Grade	First Year Cumulative GPA			
SAT-V	.476*	.178			
SAT-M	.321	.096			
IQ and Other Tests	<b>.</b> 662*	.225			
H.S. Average Rank	516*	255			
Family Background	.237	.038			
Attitude and					
Motivation ·	337	442*			
Leadership &					
Recommendations	092	437*			
Intellective					
Admissions Factor	s				
(average rating)	•555*	.211			
Non-intellective					
Admissions Factor	s				
(average rating)	062	442*			
Summer Trial Progra		•			
Grade		.518*			

<sup>\*</sup> p < .05

The most outstanding general observation to be drawn from these findings is that, while the "standard" admissions predictors are relatively useless in predicting the cumulative grade point averages of these marginal students, these factors are, nevertheless, useful in predicting performance in the Summer Trial Program. In turn, the performance in the Summer Trial Program is the best single predictor of the cumulative grade point average after a full year of college. The negative correlations between high school performance and performance at the college level might not seem too surprising in that the

low high school performance may very likely be one of the main reasons the student is in this program. But the significant thing is that within this group the correlation is negative and, at least for the summer trial grade, quite high (a correlation coefficient of .433 is statistically significant at the .05 level of confidence). This finding may be interpreted to mean that the "usual" admissions predictors may be quite useful in selecting participants for a summer trial program but the summer trial is quite necessary to determine who among the marginal entrants will most likely succeed in his first year of college. Multiple correlations reported later indicate that when the summer trial grade is used in conjunction with admissions variables, the correlation with cumulative GPA is still higher and prediction, therefore, still more valid and dependable.

Other puzzling items in these findings are the negative correlations found in such areas as attitude and motivation and in leadership and recommendations. Of course, these data come from assessments made of their high school performance and characteristics. It just may well be that such things as attitude and motivation change that much for these marginal people when they are given a second chance and have an opportunity to prove themselves or that attitude and motivation play a different enough role in college, so that even within the group those rated lower in these areas from their high school record end up with the higher cumulative grade point in college. It is a difficult finding to interpret. And, as was mentioned earlier, it is difficult to interpret the situation with leadership and recommendations because these two factors have been combined for the rating used in the analysis. It does appear, however, that the negative correlation is due largely to those rated high on their recommendations earning low cumulative grade point averages. This is an important interpretation since only recommendations from school personnel were considered and none of those from relative, friends of the family or ministers.

Finally, special attention should be drawn to the breakdown of the findings between those predictors which are intellective and those which are non-intellective. The findings seem to say that an average rating on intellective admissions variables is helpful in predicting Summer Trial Program grades but is not of much use in predicting the first year cumulative grade point. Inversely, while the average rating on non-intellective factors shows little value in predicting Summer Trial Program grades, it seems useful (due to a negative correlation) in the prediction of first year cumulative GPA.

Turning to the multiple correlation coefficients which have been computed, an effort is here made to find the combination of factors (predictors) which will give the highest correlation (and thus prediction) on the criterion variable (either Summer Trial Program grade or first year cumulative GPA).

In predicting the Summer Trial Program grade, the best results come from the use of all seven admissions variables; however nearly as high a multiple correlation is obtained when only certain variables are used. (Regression equations for making such predictions are found in Appendix C.) When all seven admissions variables are used together the multiple correlation with the summer grade is .831 (p < .01). When only four admissions variables are used (SAT-V, IQ and Other Tests, H.S. Average/Rank, Leadership and Recommendations), the correlation is still .825 (p < .01). When only the intellective variables are used the multiple correlation is .801 (p < .01), and even even when two admissions variables are used (IQ and Other Tests and H.S. Average/Rank), the multiple correlation is .799 (p < .01). The Beta weights of the admissions variables indicate that two factors (IQ and Other Tests, and H.S. Average/Rank) contribute far more to the variance in the summer grade than any of the other admissions variables and the weighting of the latter is negative (see Appendix C). When only the non-intellective variables are used, the multiple correlation with the summer grade is not significant (.470).

What, then, is the picture in predicting the cumulative GPA? If only the admissions variables are used the multiple correlation with the cumulative GPA reaches .566, which is not a statistically significant multiple correlation. However, when the Summer Trial Program grade is added the prediction becomes much improved as the multiple correlation reaches .791 (p < .05). Even when only three admissions variables (SAT-V, H.S. Average/ Rank, Leadership and Recommendations) are used with the summer grade, a multiple correlation of .706 (p = .01) is obtained. Of .course, it has to be kept in mind that whenever the Leadership and Recommendations variable is used, it lends its predictive power through a negative correlation. sum, then, the admissions variables, even when all used together, do not yield a statistically significant correlation with the first year cumulative GPA but when the Summer Trial Program grade is added, either the total number of admissions variables or even fewer selected ones will yield a significant multiple correlation with the cumulative GPA. This correlation is useful in making predictions through the use of a regression equation employing those variables with the proper weightings. (Appendix C includes a chart showing the role of the admissions variables in predicitng the cumulative GPA and the summer grade, including Beta weights for each variable in making each prediction.)

In summarizing the statistical findings presented here, it is evident that the role of the Summer Trial Program appears to be a most help&ul one (some feel it is an indispensable one) in determining who among marginal college entrants will be successful during their first year of college. The admissions variables predict well the Summer Trial Program grade and the STP grade predicts well the first year cumulative GPA, but there is no validity in predicting the first year cumulative grade from the admissions variables alone. These marginal entrants to college appear to differ in some significant ways

from regularly admitted college students and their selection should undoubtedly be put on a different base. These findings can give some important leads in the direction of what that base ought to be.

## Impressions from Individual Conferences

Reporting and interpreting the findings from the more subjective personal conferences represents a much more difficult task than dealing with the quantitative data. From the many notes taken from the conferences held during the Summer Trial Program and those held with the student assistant through the first year of their college experience, one does get definite impressions of how the participants in this project feel about the Summer Trial Program, about their first year of college, and the total experience. An effort is made here to summarize the major points made by the students and to reflect the tone of their remarks as accurately as possible.

First of all their remarks regarding the Summer Trial Program have always been positive. While they were in the midst of it, they felt grateful and impressed that they were afforded this second chance and opportunity to prove themselves. They all seemed eager to do this. They thought the Program was a good one and they were excited and happy to be a part of it. They felt they benefited greatly from it. These same feelings predominated throughout the school year. From the interviews conducted during the school year, the most frequent comments and feelings expressed were how helpful the Summer Program had been in helping them improve their study habits (some of them said they learned for the first time how to study!). They reported that it had also helped them prepare themselves emotionally and mentally (attitude-wise) for the total college experience -- but especially for the academic aspects. Mentioned many times was the increase in self-confidence which came from the Summer Program. While they did not use such terminology, there seems to have been some truly major changes for some of these people in their identity development and self concept. It has been next to impossible to get any more objective measure of this but perhaps it can accomplished in the future. One student, in particular, volunteered co one of his instructors who was complimenting him on his work in a course, that he (the student) was now a different man from the person he was before the summer experience--that the instructor would not have recognized him as the same student before. Many also mentioned the value of the Summer Program in making some personal self-evaluation as well as that along academic dimensions only. Others spoke in terms of "broadening of self" and general personal growth through the summer, especially, but through the whole year, too.

In summarizing the tone of the remarks made in the conferences throughout the year some of these same themes are found to be dominant. Over again and again came the comment that they found they had better study habits than many other students and much better than they had had before. The other most frequently mentioned theme was that dealing

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with increased self-confidence. While many of them had been socially successful and perhaps successful in other ways, they knew they had been pretty much of a failure academically in high school. Learning that they could do college work and that they even had a chance to succeed in college seemed to be doing something quite significant for them personally. Some spoke in terms of having become more sure of what they were and what they wanted to be; others spoke in more general terms of personal growth and greatly increased maturity-attributing much of this to more than the general college experience but to the summer experience and continued contact with the student essistant throughout the first college year. Whether they were accomplishing their aims or not, many also said they knew what it meant to be a good student and knew what they had to do to be a real student; this was usually put in a pretty mature way for a freshman. Some mentioned more specifically that they had grown in terms of self-discipline; one person even said that the Summer Trial Program and the year that followed "made something out of nothing." These are strong words but he was very sincere in saying them. Perhaps special comment should be made on one student who had been always nervous, on-edge, worried and under pressure -- to use the words of those who talked with him in the conferences. By the end of the first school year he was described by the student assistant as appearing very relaxed and much more at ease.

These impressions from the conferences with the participants in this special program sound like a great success story but, of course it is not all success. Six of the participants will not return for their second year of college at Hope this fall. However, one of these has a primarily medical problem only fully diagnosed during the past school year and another developed very serious emotional difficulties which caused him to fail miserably. The other four do not represent a particularly high mortality rate. From conferences with those who did not do well the impression was received that they realized (with one exception) that they were not working as they should. Among these individuals, the interviewer seemed to find considerable immaturity yet and a real waste of potential, as he put it. One student was quite totally unrealistic in his goals (which also often goes with a history of failure, of course) but the others were too interested in social life and having a good time or simply did not develop the necessary goals and incentive to use what they, themselves, admitted they had in the way of potential and skills.

Summing up the impressions received from the conferences during the summer and the follow-up conferences during the school year, it would appear that the 1967 Summer Trial Program has been quite successful in reaching the participants as persons. There seem to be some important things that have happened to these individuals during the summer and the ensuing school year. Whether or not these may be attributed to the special attention given them in this Program is hard to assess, but they themselves feel that many changes in them are attributable to this total experience.

Conclusions and Recommendations

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#### Conclusions and Recommendations

The major conclusions to be drawn from this study are very clear-cut, even though it must be considered an exploratory study to be followed by more intensive and extensive investigation of the preliminary findings here reported.

First of all, it was found that the usual predictors of success in college (psychological tests, high school grades and rank, SAT scores) were not at all valid for predicting first year cumulative grade point averages for these marginal entrants. However, they were valid for predicting performance in the Summer Trial Program. In turn, the Summer Trial Program grade or that grade used with admissions variables did prove valid in predicting the first year cumulative GPA.

It is also quite obvious that the Summer Trial Program was a generally successful program for these marginal students. The first year cumulative GPA's ranged from .954 to 2.614 (on a 4.0 scale) with a mean of 1.830 (a GPA of 1.6 is required of freshmen to remain in good standing at Hope College). Thirteen of the nineteen admitted to the college following the Summer Trial Program are still in good standing and two of the six who have dropped out, did so for reasons other than simple academic failure. The attrition is actually not far different from that of regularly admitted students.

From the follow-up study of the participants during the school year, the total program also appears successful in helping students establish productive study habits and attitudes toward college life. Possibly even more important was the frequent mention of changes in personal growth, particularly self-confidence, which these marginal entrants achieved during this total year's experience.

Recommendations for further study must include additional study and research on this type of summer program and the sort of results it achieves. The personnel involved in administering the Program are very humble about the outcome and do not profess to know just what it is about this type of program that produces the good results and what might be changed to avoid more of the failures. Perhaps further investigation of this kind of program--especially the personal attention aspects--will reveal just where the critical factors lie. Greater numbers of students need to be studied and, if at all possible, more precise instruments must be found or developed to assess the changes and progress which occur. However, one impression is very strong, viz., that the numbers in any particular program should be kept small enough to maintain the sense of personal attention and concern given each individual participating in such a program.



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Supplementary and Appendix Materials

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Appendix A

Tentative Method for Rating Summer Trial Students

#### Tentative Method for Rating Summer Trial Students

#### Areas of rating:

- A. CEEB (SAT) scores (ratings on V and M)
- B. IQ and other tests (average of ratings on IQ's and percentile rank on "other tests:" general achievement, "educational development" tests, etc.)
- C. High School performance (average of ratings on H.S. average and rank in graduating class)
- D. Family background (average of ratings on parents' education; then that rating is averaged with rating on father's occupation)
- E. Attitude and Motivation (average of "irregular record" rating-especially B's in solid subjects and rating on evidences of
  positive attitude and motivation)
- F. General assessment of the <u>person</u> (average of ratings on (1) H.S. activities and significant leadership and (2) recommendations by school people--no recommendations by relatives, friends of family, or ministers used)

Guides for making ratings in various areas (all ratings from top 5 down to 1 or 0):

#### A. SAT scores

5 - 500+ 4 - 450-499 3 - 400-449 2 - 350-399 1 - 301-349

0 - below 300 ·

#### B. IQ and other tests

#### C. H.S. Average and Rank

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H.S. Ave.

5 - B- or 85 and above (2.6+)

4 - C+ or 83-84 (2.4-2.5)

3 - C or 79-82 (1.9-2.3)

2 - C- or 77-78 (1.7-1.8)

1 - D+ or 76 and below

(1.6 and below)

H.S. Rank

5 - top 1/5

4 - fourth 1/5

2 - second 1/5

1 - bottom 1/5

#### D. Family background

Educ. of parents

- 5 grad. work or post-college
- 4 college graduate
- 3 college work or post-H.S.
- 2 high school graduate
- 1 high school work or less
- 0 9th grade or less

#### E. Attitude and motivation Irregular Record

- 5 several B's in "solid subjects" or definite improvement in last year
- 4 -
- 3 a B or two in solid subjects or good and bad years
- 2 -
- 1 consistently mediocre/poor
   record

## F. General assessment of person

H.S. Activity & Leadership

- 5 several positions of
   "significant leadership" in
   H.S. years
- 4 -
- 3 participation but little or no "significant leadership" positions
- 2 -
- 1 little participation or leadership

#### Occup. of father

- 5 professional
- 4 manager or executive
- 3 business or supervisory
- 2 skilled labor
- 1 unskilled or semi-skilled

#### Attitude and Motivation

- 5 several evidences of good attitude or strong motivation
- 4 -
- 3 some evidence of good attitude or strong motivation
- 2 -
- 1 no particular evidence
   on attitude and/or
   motivation

#### Recommendations

- 5 several positive recommendations by school personnel
- 4 -
- 3 at least one strong recommendation
- 2 no positive recommendations or positive and negative recommendations
- 1 negative recommendations

Appendix B

Matrix of Correlations on Significant Variables

## Matrix of Correlations on Significant Variables

	SAT-V	SAT-M	IQ and Other Tests	H.S. Ave./ Rank	Family Back- ground	Attitude and Mot'n	Ldrshp and Rec'ns
-1			<del></del>				
SAT-V	at a transite	Alvis A				i	: a
SAT-M	.119						
IQ and Other Tests	.556**	.143					
H.S. Average/ Rank	556**	225	388				••••
Family Back- ground	.196	.207	.242	.080			
Attitude and Motivation	-,224	-,438*	262	.361	154		
Leadership and Recom- mendations	.299	010	003	.098	.129	.193	
Summer Trial Grade	<b>.</b> 476*	.321	•662**	516*	-237	337	•092
First year Cumulative GPA	.178	•096	,225	255	•038	442*	437*

<sup>\*</sup>p < .05 \*\*P < .01

## Appendix C

Role of Admissions Variables in Predicting

First-year Cumulative GPA and Summer Trial Program Grade

## Predicting Summer Trial Program Grade from Admissions Variables

Regression equation for predicting STP grade from 7 admissions variables:

```
X = - .134 (SAT=V) + .046 (SAT=M) + .394 (IQ and Other Tests) - .662 (H.S. Average/Rank) + .077 (Family Background) + .042 (Attitude and Motivation) + .213 (Leadership and Recommendations) + 2.119

((Multiple R = .831; Error of est. = .518))
```

Regression equation for predicting STP grade from 4 admissions variables:

```
X = - .120 (SAT-V) + .436 (IQ and Other Tests) - .625 (H.S. Average/Rank + .211 (Leadership and Recommendations) + 2.435 ((Multiple R = .825; Error of est. = .449))
```

Regression equation for predicting STP grade from 2 admissions variables:

$$X = .3995$$
 (IQ and Other Tests) - .475 (H.S. Average/Rank) + 2.459 ((Multiple R = .799; Error of est. = .440))

## Predicting First Year Cumulative GPA from Admissions Variables and STP Grade

Regression equation for predicting cumulative GPA from 7 admissions variables and STP grade:

```
X = .179 (SAT-V) - .069 (SAT-M) - .212 (IQ and Other Tests) + .533 (H.S. Average/Rank) - .059 (Family Background) - .153 (Attitude and Motivation) - .485 (Leadership and Recommendations) + .767 (STP Grade) + 1.169 ((Multiple R = .791; Error of est. = .470))
```

Regression equation for predicting cumulative GPA from 3 admissions variables and STP grade:

Regression equation for predicting cumulative GPA from 2 admissions variables and STP grade:



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## Predicting First Year Cumulative GPA from Admissions Variables

Regression equation for predicting cumulative GPA from 7 admissions variables:

# Role of Admissions Variables in Predicting First Year Cumulative GPA and Summer Trial Program Grade

	SAT-V	SAT-M	IQ and Other Tests	H.S. Average/ Rank	Family Back- ground	Attitude and Mot <sup>f</sup> n	Idrshp and Rec'ns
r with Cum. GPA	.178	.096	.225	- ,255	.038	442	437
r with STP Grade	.476	,321	.662	516	.237	337	.092
Beta weigh Predicting Cum GPA wi Adm. varia	.186	085	.172*	.024	00008	230	470
Beta weigh Predicting Cum. GPA w Adm. varia and STP Gr	t ith .439 bles	177	403	•524	087	291	710
Beta weigh Predicting ST. Grade with Adm. variables	t	.092	.578**	503	.088	.061	.241

<sup>\*.255</sup> when used with SAT-V only

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<sup>\*\*.639</sup> when used with SAT-V, H.S. Average/Rank, and Leadership and Recommendations ratings

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